**IN THE CLAIMS**

1-7. (Cancelled)

8. (Currently amended) A replication method for producing a smooth object (18, 20) having a low surface roughness, comprising the steps of:

producing a replication master (10) by:

forming said master (10) such as to have a desired external surface shape which at least partially corresponds to a counterform of a surface of an object (18, 20) to be produced by replication;

treating said external surface of said master (10) to obtain a predetermined surface roughness value; and

coating at least a part of said master (10) with a smoothening layer (16) made of a ~~soluble~~ polymer material ~~having~~ which has a flowability such that the top surface of said smoothening layer displays a smaller roughness than the surface on which it is formed and which is soluble after being formed on said master (10);

coating at least a part of said smoothening layer (16) on said master (10) with an object material such that the surface of said object (18, 20) corresponds to a counterform of said master (10); and

releasing said object (18, 20) from said master (10).

9. (Previously presented) The method according to claim 8, wherein said releasing step comprises dissolving at least one of said smoothening layer (16) and a release layer on top of said master (10) by a solvent.

10. (Previously presented) The method according to claim 8, which furthermore comprises the step of providing glue (20) to at least one of said object (18, 20) and an object support (12) and gluing them together before executing said releasing step.

11. (Previously presented) The method according to claim 10, wherein the amount of said glue (20) is chosen such as to fill gaps between said object (18, 20) and said object support (12).

12. (Previously presented) The method according to claim 8, wherein said object (18) is a reflection or transmission monolayer, bilayer or multilayer.

13. (Currently amended) The method according to claim 12, which furthermore comprises the step of characterizing said ~~optical device (18)~~ reflection or transmission monolayer, bilayer or multilayer on top of said master (10) before executing said releasing step.

14. (Currently amended) The method according to claim 13, wherein said characterization step comprises performing a profilometry or reflectometry measurement of said ~~optical device (18)~~ reflection or transmission monolayer, bilayer or multilayer.

15. (Previously presented) The method according to claim 8, wherein said object (20) is a substrate (20a) for an optical device (18).

16. (Previously presented) The method according to claim 15 and claim 10, wherein said object material and the material of said glue (20) are identical.

17. (Previously presented) The method according to claim 16, wherein said object material and said glue (20) comprise epoxy resin.

18. (Previously presented) The method according to claim 15, which furthermore comprises the step of coating at least a part of said master (10) with a protection layer on top of said smoothening layer (16) or on top of a release layer before applying said object material.

19-29. (Cancelled)

30. (Previously presented) The method according to claim 8, wherein said smoothening layer (16) is applied by dip-coating or spin-coating said master (10) with a liquid smoothening material and hardening said smoothening material.

31. (Previously presented) The method according to claim 8, which furthermore comprises the step of coating at least one additional smoothening layer on top of or under said soluble smoothening layer (16).

32. (Currently amended) The method according to ~~claim 20~~ claim 31, wherein at least one of said additional smoothening layers is made of a non-soluble material.

33. (Currently amended) The method according to ~~claim 20~~ claim 31, which furthermore comprises the step of coating a thin spacer layer between at least two adjacent smoothening layers.

34. (Previously presented) The method according to claim 33, wherein the thin spacer layer is a thin metallic spacer layer.

35. (Previously presented) The method according to claim 8, wherein the smoothening layer (16) has a roughness of 5 Angströms or less.